ASSIGNMENT-3

**1.What does symmetric distribution mean?**

Symmetric distribution occurs when the values of variables appear at regular frequencies and often the mean, median and mode all occur at the same point. If a line were drawn dissecting the middle of the graph, it would reveal two sides the mirror one other.

**2.What is left skewed distribution and right skewed distribution?**

Left skewed distribution:

If one tail is longer than another, the distribution is skewed. A left skewed distribution has a long left tail. It also called negatively skewed distribution. That’s because there is a longtail in negative direction on the number line. This means is also to the left of the peak.

Right skewed distribution:

Right skewed distribution is also known as positively skewed distribution. The most data falls to the right, or positive side, of the graph's peak. Thus, the histogram skews in such a way that its right side (or "tail") is longer than its left side.

**3.Where are long-tailed distributions used?**

Long-tailed distribution used to model many internet-era phenomena such as the frequency distribution of book titles sold at Amazon.com or the frequency of internet search terms.

**4.What is the central limit theorem?**

The central limit theorem (CLT) states that the distribution of sample means approximates a normal distribution as the sample size gets larger, regardless of the population's distribution. Sample sizes equal to or greater than 30 are often considered sufficient for the CLT to hold.

**5.What are observational and experimental data in statistics?**

Observational data:

Statistics involves a lot of studies, experiments, and data collection. One such type of study is the observational study. An observational study is a study in which the researcher simply observes the subjects without interfering.They just observe the subjects and record data based on their observations.

Experimental statistics:

Experimental data in science and engineering is data produced by a measurement, test method, experimental design or quasi-experimental design. Experimental data can be reproduced by a variety of different investigators and mathematical analysis may be performed on these data.